Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

DRAFT Title V, Operating
Permit: V-06-047 Renewal
Aleris International, Inc.
Morgantown, KY 42261
April 3, 2007
Rita Arguello, Reviewer

SOURCE ID:	21-031-00033
SOURCE A.I. #:	11316
ACTIVITY ID:	APE20050003

SOURCE DESCRIPTION:
Aleris International, Inc. (former IMCO) owns and operates a secondary aluminum production plant, a salt cake processing facility, and a proprietary residual landfill for disposal of salt cake on a 451-acre tract of land located approximately one mile west of Morgantown, Kentucky. The raw materials processed at Aleris's Morgantown facility consist of various types of scrap aluminum, including both coated and uncoated aluminum coil, dross from primary aluminum production, used beverage cans (UBCs), scrap siding, and miscellaneous aluminum scrap types. Aleris International, Inc. is subject to the requirements set forth in the MACT (Maximum available control technology) standard for the secondary aluminum industry, 40 CFR Part 63, Subpart RRR.

The UBCs, coated aluminum scrap, and miscellaneous scrap require processing, shredding and delacquering, prior to being charged to the rotary or reverberatory furnaces. UBCs are the primary feedstock for the reverberatory furnaces. The UBCs are usually received in bales and are stored in the concrete storage yard. The bales are transported to the shredder by forklift. The UBC bales are processed by the shredder, and the shreds are transported to the delacquer furnace by an overhead conveyor. The delacquering furnace burns and removes the paint on the shreds that are then fed directly to the reverberatory furnaces. Coated scrap aluminum siding is processed in the same manner.

Aleris utilizes six rotary furnaces to melt aluminum scrap in a batch process. After charging, the scrap is covered with a salt flux (NaCl or KCl) to reduce oxidation and a small quantity (<2%) of cryolite (NaAlF) is added to improve coalescence of molten metal. The rotary furnaces are paired and exhaust gases are ducted to pass through one of three five-module lime-injected baghouses where the fine particles are removed and gases are neutralized. Particulates are collected for offsite disposal. Furnace baghouses are equipped with primary and secondary air exchangers for reducing the flue gas temperature at the baghouse to less than 250^{o}F. Particle removal efficiency of the furnace baghouses is 97%. Aleris has installed five-module baghouses on the rotary furnaces in order to allow individual modules to be removed from service for maintenance without unacceptably reducing baghouse performance.

Aleris also uses reverberatory furnaces to continuously melt aluminum scrap. From the reverberatory furnace, the molten aluminum is either poured into molds and allowed to cool to form ingots or tapped into crucibles mounted on flatbed trailers for molten delivery to customers. The crucibles are pre-heated with crucible heaters rated at 2.1 MMBTU/hr.

The salt cake (spent flux and oxides) is periodically removed from furnaces and transported to the Mud Building, where it is allowed to cool. After cooling the salt cake is loaded into trucks and hauled to the salt cake processing facility to recover additional particulate aluminum which is returned to the furnaces for re-processing.

Aleris received a construction permit for the salt cake processing facility in 1995. This facility was constructed and in operation by late 1995. This plant processes salt cake generated at Morgantown, as well as salt cake generated by other Aleris facilities. The salt cake processing facility has the capability of processing 300,000 tons of salt cake annually. The recovered aluminum is returned to the furnaces for reprocessing.

Aleris owns and operates a permitted residual landfill for the disposal of salt cake generated by the salt cake processing facility. This landfill generates fugitive ammonia and particulate emissions. The ammonia emissions result from the hydration of the salt cake. Once wet, the salt cake generates an estimated 130 tons per year of ammonia fugitive emissions from the landfill. All tests performed by the Division have demonstrated compliance at the property line.

Other emission sources at Aleris's Morgantown facility include the crucible cleaning station, transporting aluminum to the storage bins and storage yard, haul roads, and the salt cake cooling area.

COMMENTS (RENEWAL):
The regulation 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart RRR-National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production has been incorporated to this permit. EPA still has issues with Aleris International, Inc., such as:

1. Stack testing for Reverberatory and Delacquering Kiln; and
2. The residence time for their afterburner.

In November 7, 2002, Aleris International Inc., formerly IMCO Recycling Inc. submitted a minor permit modification for changing fume collection hoods on their five rotary furnaces. Aleris claimed that it was a minor source for criteria pollutants at the time and claimed that the modification would not be subject to review under PSD regulation. However division's calculations showed that they were major source at the time. The critical affected unit, which put them in the major source category for PM/PM10, was the shredder.

They performed stack testing for PM/PM10 for the shredder in 2003. The stack test was performed at 22.5 tons per hour feed rate that was used by the Division to calculate the Potential to Emit (PTE). However Aleris claimed that they had shredded excess material for the stack test and dumped the excess material on the side. The material that is shredded at the shredder is directly conveyed to the Delaquering Kiln and the delaquered material is directly conveyed to the Reverberatory furnace. Aleris claimed that they couldn't melt the material if they shredded more than the maximum they could feed at the Delaquering Kiln as there was no other mechanism than the direct conveyers. They argued that Delacquering Kiln thus would be a bottleneck in calculating the potential emissions from the Shredder. In spite of the Shredder maximum capacity of 22.5 tons per hour, they have a bottleneck, the Delacquering Kiln, and hence the company claimed that they were not a major source for criteria pollutant at that time.

After careful review, the Division for Air Quality, in December 1, 2006, agreed with the argument that Aleris was not major source for criteria pollutants at the time and was not subject to PSD review for the modifications of the hoods.

APPLICABLE REGULATIONS:

	Applicable Requirements
Shredder	
Operation	40 CFR 63.1506(a)(1)(4) 40 CFR 63.1506(p) 40 CFR 62.1506(e)(1) 40 CFR 63.1506(c)
Emission Standards	40 CFR 63.1505(b)(1) KAR 401 59:010
Testing	40 CFR 63.1512(a)(q)(s) 40 CFR 63.1511(a)(b)(c)(e)(g) 40 CFR 63.1(a)(3); 40 CFR 63.7(f) 40 CFR 63.1513(b); 40 CFR 63.1505 401 KAR 59:010
Specific Monitoring	40 CFR 63.1510(f)(d)
Recordkeeping	40 CFR
Specific reporting	40 CFR 63.1516(a)(1)(2)
Delacquering	
Operation	40 CFR 63.1506(d),(b)(1)(2)(3),(p) 40 CFR 63.1506(c)(1)(2)(3) 40 CFR 63.1506 (g)
Emission Limitation	40 CFR 63.1505(d); 40 CFR 63.1505(e) 401 KAR 59:010
Testing	40 CFR 63.1511(a)(b)(c); 40 CFR 63.1501(a); 40 CFR 63.1511(c); 40 CFR 63.1512(m)(1)(2) 40 CFR 63.1512(n); 40 CFR 63.1512(c),(o),(p),(q),(r),(s); 40 CFR 63.1513(a)(b) 40 CFR 63.1(a)(3); 40 CFR 63.7(f)
Specific Monitoring	40 CFR 63.1510(c),(d), (f), (g), (h); 40 CFR 63.1510 (e)(1)(2); 40 CFR 63.1510(i)(1)(2)
Recordkeeping	40 CFR 63.1517(b)(a)
Reporting	40 CFR 63.1515(a)(b)(c)
Reverberatory	
Operation	40 CFR 63.1506(m)(1)(3)(4)(5)(6), 40 CFR 63.1506 (p), (b), (c), (a), (d)
Emission Limitation	40 CFR 63.1505(i),(k) 40 CFR 63.1513(b) 401 KAR 59:010
Testing	40 CFR 63.1511(a), (c), (e), (g)

	40 CFR 63.1(a)(3); 40 CFR 63.7(f) 40 CFR 63.1512(d)(4); 40 CFR 63.1512(k), (o), (p), (q), (r), (s)
Specific Monitoring	40 CFR 63.1510(a), (c), (d), (e), (f), (h), (i), (j), (n), (s)
Recordkeeping	40 CFR 63.1517(a),(b)
Reporting	40 CFR 63.1516(a), (b), (c)
Rotary Furnaces	
Operation	40 CFR 63.1506(m) 40 CFR 63.1506 (p), (b), (c), (a), (d)
Emission Limitation	40 CFR 63.1505(i); 40 CFR 63.1513(b) 401 KAR 59:010
Testing	40 CFR 63.1511(a), (c), (e), (g) 40 CFR 63.1(a)(3); 40 CFR 63.7(f) 40 CFR 63.1512(d)(4); 40 CFR 63.1512(k), (o), (p), (q), (r), (s)
Specific Monitoring	40 CFR 63.1510(a)(c), (d), (f), (g), (h); 40 CFR 63.1510 (e), (j), (s), (t) 40 CFR 63.1510(i) 40 CFR 63.1512(o)
Recordkeeping	40 CFR 63.1517(b)(a)
Reporting	40 CFR 63.1515(a)(b)(c)
Salt Cake Cooling	
Emission Limitation	401 KAR 59:010; 401 KAR 63:010
Testing	401 KAR 59:005; 401 KAR 50:045; 401 KAR 50:015
Salt Cake Processing	
Emission Limitation	401 KAR 59:010; 401 KAR 63:010; 401 KAR 53:010
Testing	401 KAR 59:005; 401 KAR 50:045; 401 KAR 50:015
Crucible	
Emission Limitation	401 KAR 59:010; 401 KAR 63:010
Testing	401 KAR 59:005; 401 KAR 50:045; 401 KAR 50:015
Landfill	
	401 KAR 63:010
Plant Wide	40 CFR 63.1510(a), (b)

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.